

# Four New Combinations in the Genus *Nasa* (Loasaceae)

Maximilian Weigend

Lewis B. and Dorothy Cullman Program for Molecular Systematics Studies, New York Botanical Garden, 200th St. & Southern Blvd., Bronx, New York 10458, U.S.A. Current address: Institut fuer Biologie–Systematische Botanik und Pflanzengeographie, Freie Universitaet Berlin, Altensteinstr. 6, D-14195 Berlin, Germany

**ABSTRACT.** New combinations for four South and Central American species formerly assigned to *Loasa* are proposed: *Nasa lindeniana* (Urban & Gilg) Weigend and *Nasa venezuelensis* (Steeyermark) Weigend from Venezuela, *Nasa speciosa* (Donnell Smith) Weigend from Costa Rica and Panama, and *Nasa herzogii* (Urban & Gilg) Weigend from Bolivia.

**Key words:** Bolivia, Central America, Costa Rica, *Loasa*, Loasaceae, *Nasa*, Panama, South America, Venezuela.

The genus *Nasa* Weigend was established to accommodate the major part of the southern and central Andean species formerly included in the genus *Loasa* Adanson and now contains ca. 100 species, distributed from southern Mexico to northern Bolivia and Chile. The genus is characterized by a suite of unique characters, most importantly by inflorescence branches with only one recaulescent bract per flower, floral scales with apical wings and dorsal sacs, and a chromosome number of  $2n = 28$ . The vast majority of taxa are found in Colombia (ca. 20, Weigend, in press), Ecuador (ca. 30, Weigend, 1999, 2000), and Peru (more than 40, Weigend, 1998). Only four species of *Nasa* are found exclusively outside these three countries, and the new combinations required are here provided.

**1. *Nasa herzogii*** (Urban & Gilg) Weigend, comb. nov. Basionym: *Loasa herzogii* Urban & Gilg, Meded. Rijks-Herb. Leiden 29: 57. 1916. TYPE: Bolivia. Santa Cruz: forest next to Río Tocarani, 2600 m, July 1911, *T. Herzog* 2277 (lectotype, selected here, L; isolectotypes, S, Z, B—photo F neg. #10195).

The holotype in Berlin is lost, and the Leiden specimen is here chosen as the lectotype. *Nasa herzogii* is one of two species of the genus found in Bolivia. It is a subperennial or subshrub from the cloud forest in Santa Cruz with large, widely ovate leaves (width > 7 cm) and ovoid capsules. The only

other species of *Nasa* in the country is the annual *N. ferruginea* from the Altiplano (Lake Titicaca area) with considerably smaller, ovate leaves (diam. < 5 cm) and clavate capsules.

**2. *Nasa lindeniana*** (Urban & Gilg) Weigend, comb. nov. Basionym: *Loasa lindeniana* Urban & Gilg, Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 76: 194. 1900. TYPE: Venezuela. Mérida: Sierra Nevada near Mérida, 3000 m, 1842, *J. Linden* 405 (lectotype, selected here, BM; isolectotypes, CGE, K, OXF, P, W). SYNTYPES: same locality, *N. Funck* & *L. J. Schlim* 1045 (BM, G, P, W, fragment F).

Urban and Gilg (1900) cited two different collections in their protologue: *Linden* 405 and *Funk & Schlim* 1045. The Linden collection is here chosen as lectotype as it includes the better and more complete specimens. *Nasa lindeniana* is unique in the genus in its possession of two inflexed (instead of erect) apical wings on its floral scales, and is easily distinguished from the other species of the genus present in Venezuela (see *Nasa venezuelensis* for a comparison).

**3. *Nasa speciosa*** (Donnell Smith) Weigend, comb. nov. Basionym: *Nasa speciosa* Donnell Smith, Bot. Gaz. (Crawfordsville) 23: 8. 1897. TYPE: Costa Rica. Cartago: Volcán Turrialba, 7500 ft., Jan. 1889, *H. F. Pittier* 875 (lectotype, selected here, CR not seen; isolectotype, BR). SYNTYPE: same locality, Mar. 1894, *F. N. Cox* 4812 (US).

Donnell Smith (1897) cited two collections in the protologue of *Loasa speciosa* and specifically stated that he had seen the Costa Rican National Herbarium (CR) specimen of *Pittier* 875; he also cited *Cox* 4812, but without indicating in which herbarium he had seen a specimen of this collection. It therefore seems adequate to select the one specimen that

the author certainly had seen when describing the plant (i.e., *Pittier 875* in CR) as the lectotype. *Nasa speciosa* and *N. triphylla* (Jussieu) Weigend are the only two species of *Nasa* in Central America: *N. triphylla* is an annual herb with white, spreading petals and triangular-ovate, bipinnatisect to bipinnate leaves (Dostert & Weigend, 1999). *Nasa speciosa* is a shrub with orange, campanulate corollas and widely ovate to pentagonal leaves with 3–4 widely triangular, very shallow leaf lobes on each side. It is only found in Panama and Costa Rica, whereas *Nasa triphylla* ranges from southern Mexico to northern Peru.

**4. *Nasa venezuelensis*** (Steyermark) Weigend, comb. nov. Basionym: *Caiophora venezuelensis* Steyermark, Fieldiana, Bot. 28(2): 414. 1952. *Loasa venezuelensis* (Steyermark) Weigend, Sendtnera 3: 234. 1996. TYPE: Venezuela. Mérida: Mérida, La Isla at Tabay, 2280–2745 m, 18 May 1944, J. A. Steyermark 56594 (holotype, F).

*Caiophora larensis* Steyermark, Fieldiana, Bot. 28(2): 412. 1952. TYPE: Venezuela. Lara: between Buenos Aires & El Callado valley, above Humocaro Alto, 2285–2740 m, 12 Jan. 1944, J. A. Steyermark 55528 (holotype, F).

*Nasa venezuelensis* is easily distinguished from the other two species of *Nasa* found in Venezuela: It differs from *Nasa triphylla* in having orange petals up to 5 cm long (vs. white petals up to 1.5 cm long) and uniformly yellow floral scales without a dorsal callus (vs. floral scales with horizontal bands in red, yellow, and white with a dorsal callus). It differs from *Nasa lindeniana* in having a spreading corolla with membranaceous, apically acuminate, and deeply boat-shaped petals with a basal claw (vs. a campanulate corolla with carnose, apically rounded, and nearly planar petals without claw),

nectar scales with erect apical wings (vs. inflexed apical wings), and a triangular, bipinnate to bipinnatisect lamina (vs. a widely ovate to pentagonal lamina with shallow lobes). *Caiophora larensis* differs very slightly in leaf indument, but it is so far only known from the very poorly preserved type specimen (Weigend, 1996) and is here considered as a synonym of *Nasa venezuelensis*.

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#### Literature Cited

- Donnell Smith, J. 1897. Undescribed plants from Guatemala and other Central American Republics VII. Bot. Gaz. (Crawfordsville) 23: 1–14.
- Dostert, N. & M. Weigend. 1999. A synopsis of the *Nasa triphylla* complex (Loasaceae), including some new species and subspecies. Harvard Pap. Bot. 4: 439–467.
- Urban, I. & W. Gilg. 1900. Monographia Loasacearum. Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 76(1): 1–368.
- Weigend, M. 1996. Notes on *Loasa* I–III. Sendtnera 3: 219–253.
- . 1998. *Nasa* y *Presliophytum*: Los nombres y sus tipos en los nuevos géneros segregados de *Loasa* Juss. *sensu* Urb. & Gilg en el Perú. Arnaldoa V(2): 159–170.
- . 1999. Loasaceae. In P. M. Jørgensen & S. León-Yáñez (editors), Checklist of the Vascular Plants of Ecuador. Monogr. Syst. Bot. Missouri Bot. Gard. 75: 954–955.
- . 2000. No. 132. Loasaceae. Pp. 1–92 in L. Andersson & G. Harling (editors), Flora of Ecuador Vol. 64.
- . In Press. Loasaceae. In R. Bernal (editor), Flora de Colombia.